2014

Fluoride supplementation: recommendations in the primary care office

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Fluoride supplementation: recommendations in the primary care office

DWIGHT PARKER, HINESBURG FAMILY PRACTICE

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Slide 2

Problem identification/need

- A significant number of patients in Hinesburg Family Practice have or are expecting children
- After participating in several new patient visits and well child check ups it became apparent through individual discussions that none of the attending physicians were very familiar with CDC/AAP/AAD recommendations regarding fluoride, especially when it came to rural areas in Vermont not on town or public water
- In meeting with each of them I was given such questions as:
  - What are the pros and cons of fluoride supplementation?
  - What are the indications for supplementation?
  - How does one go about testing their well water?
  - Which towns have fluoridated water, and what are their levels?
  - What doses are recommended, and what options are there for treatment?

Slide 3

Public health cost

- Dental caries are still the most common chronic disease of children in the US, and in Vermont $2.7 million is spent annually caring for children ages 0-5 with early childhood caries who require hospitalization for treatment
- Two separate studies recently conducted by the CDC show that for larger communities (>20,000 people) every one dollar invested in fluoridation yields $38 in dental treatment cost savings
- In very small communities (like Hinesburg and its surrounding communities of <5,000 people) cost savings can still approach between $5 and $16 in dental treatment cost savings
- Well water testing is free of charge courtesy of the Vermont Department of Health for families with children under the age of four years. Many private labs cost about $7 per sample to run, 2 samples are recommended per household

Slide 4a

Community Perspective and Interviews

- *Name Withheld*, RDH, BA, PBC (VDOH Office of Oral Health)
  - The VDOH mails out "Vermont's Guide to Fluoride Levels in Public Water Systems" every three years, which contains fluoride levels for all cities, towns, and public water supplies with greater than 15 "connections"
  - Confirmed that in towns like Hinesburg with <5,000 residents, $1 saves approximately $5 long term
  - Vermont has had fluoridated water in many locations since 1953, less than ten years after the first city in the world (Grand Rapids, MI, in 1944)
  - Currently, 252,430 Vermont residents have access to water with fluoride high enough to provide dental enamel protection (about 1/3 of the state)
  - Highly endorses well water testing and supplementation when needed per CDC recommendations

Slide 4b

Community Perspective and Interviews

- *Name Withheld*, MD, MPH (Richmond Pediatric and Adolescent Medicine)
  - Brings up the topic of fluoride at the 2 month well child visit
  - Determines what water the child has access to and recommends starting to give small sips of fluoridated water throughout the day by age 6 months
  - Follows CDC recommended guidelines (possible supplementation from 6 months to 3 years, ages 3 to 6, and then up to age 16 with doses depending on water fluoride levels)
  - Makes an effort to have an idea of patients' water sources throughout the week (daycare, school, family members' homes) and what they actually are drinking (processed beverages, well water from home in water bottle, etc.)
  - Has many patients who are opposed to fluoridated water, similar to the recent debate in Oregon. Spends significant time discussing appropriate research techniques and sources with patients
  - Strongly endorses water fluoridation as a critical element in oral health and a regular part of his well child exam

Intervention and Methodology

- This was a quality improvement intervention to ensure adequate attention is paid to fluoride for children with developing teeth in Hinesburg and its surrounding areas
- Interviews were conducted with office staff to determine areas needing attention
- A survey of primary and secondary sources was performed to create a 3 page fact sheet to be distributed at a staff meeting along with office practice suggestions
- A PowerPoint presentation (office meeting) accompanied the fact sheet along with a question and answer session on 6/9/14
- "Vermont's Guide to Fluoride Levels in Public Water Systems" was assembled for the office and placed with other recommended guideline resources in the nursing and office hub
- Office fax forms for well water testing kit requests were placed in a divider in the same location as other public health forms (i.e. immunizations) in a central location for easy accessibility during well child checks and new patient visits where this would be relevant

Slide 6

Results/Response

- Immediate feedback from the staff was extremely positive
- Several nurses and physicians commented that it was a very pertinent topic and actually very useful in their daily practice
- Enamel erosion pathophysiology along with fluoride's protective mechanisms were well received and staff was interested and engaged
- When presenting "Vermont's Guide" many of the staff members looked through it themselves and checked their own home town levels
- Questions arose regarding making fluoride varnish available here at Hinesburg Family Practice for use during WCCs (as is done at University Pediatrics)
- Staff voiced understanding of the VDOH procedure along with location of the guide book and kit forms. Verbal confirmation that guidelines would be followed.

Evaluation of Effectiveness/Limitations

- 3 of the attending physicians and a nurse practitioner were unable to attend the office meeting (2 physicians, 1 NP, 4 RNs, 3 LPNs, and clerical staff were in attendance)
- Receipt of the fact document by the missing parties as well as information regarding VDOH recommendations was ensured though they were not able to participate in the discussion as a whole
- Whether or not the materials and recommendations are put into use can only be ascertained by follow up in several weeks to several months and without chart audits must be qualitatively assessed by individual providers themselves
- Several of the nursing staff are planning on participating in follow up and all staff are enthusiastic about having clear guidelines to follow
- Possible follow up emails from myself to attending physicians and nurse practitioners for updates on addressing fluoride supplements and well water testing

Recommendations for future projects

- Extending this quality improvement intervention to more primary care practices throughout the state of Vermont is logical and needed in many areas
- Though many practices already follow VDOH/CDC guidelines, Linda Greaves with the Office of Oral Health indicated that their list of medical primary care offices is not nearly as complete as their list of dental providers who receive updated booklets every three years
  - A future direction could be to work with the Office of Oral Health to expand the mailing list and follow up with new contacts
- Another option would be to create a dot phrase in Prism for fluoride sources and oral health in a family practice well child check and work with the office staff to implement it
- Pursuing the possibility of making in-office fluoride varnish available for at-risk children as a part of their well child check ups would be beneficial, especially since Hinesburg FP staff are already interested in the possibility
  - Many patients with Medicaid are having an increasingly difficult time finding dentists who accept it and could benefit from in-office varnish application

Slide 9

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